MIC IP dynamic 7000 HD, MIC IP starlight 7000 HD

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BOSCH
Invented for life

- Exceptional strength and ruggedness for any outdoor, industrial, or commercial surveillance application
- Choice of starlight (720p50/60) or dynamic (1080p25/30) camera technology with high-performance 30x lens for scenes with limited or non-uniform illumination
- Field-installable combo illuminator (IR/white light) with 3D diffuser and constant light for applications requiring recognition-level details in monochrome mode or even in color mode
- Simple installation with new hinged DCA mounting accessory and new cable design saves time and installation-related costs
- Exceptional system intelligence offers advanced video analytics (IVA) and Content-Based Imaging Technology (CBIT)

The MIC7000 camera has an advanced PTZ platform that was designed using Bosch's domain expertise in material engineering, mechanical design, intelligent imaging, and video streaming.
The camera complies to some of the toughest industry standards such as IK10 and IP68/NEMA 6P for extreme mechanical strength and durability.
The camera is designed using the latest technology in intelligent imaging and video streaming. Thanks to the intelligent coding and Content-Based Imaging Technology (CBIT), the HD module delivers high-resolution video even under challenging light conditions at very low bit rates.

Functions

Ruggedized design for extreme applications
The MIC7000 camera is designed to last in surveillance applications that are beyond the mechanical capabilities of normal PTZ domes or conventional positioning systems. The complete metal body has been engineered to withstand high-impact or continuous low-frequency vibration. The camera models comply to IK10 rating for impact resistance and to the IEC 60068 standards applicable to vibration and shock.
The camera is designed specifically for use in extreme environments around the world. Standard models can operate in a temperature range of -40 °C to +60 °C

(-40 °F to +140 °F). Extreme low temperature models can operate in a temperature range of -60 °C to +50 °C (-76 °F to +122 °F).
The camera benefits from Bosch Automotive domain knowledge in material engineering and coatings. As a result, the superior metallurgy and the finish of the camera provide unprecedented protection against corrosion, meeting the ASTM B117 standard for corrosion resistance.

Integrated wiper
Regardless of the weather, the MIC camera is able to capture the highest possible quality image all year long, thanks to its integrated, long-life silicone wiper.

Window-defrosting function
In addition, the camera incorporates an internal long-life blower that directs warm air towards the inside of the front window of the camera, providing an effective window-defrosting function.

Anti-fog
With the anti-fog mode feature, visibility can be improved significantly when viewing foggy or other low-contrast scenes. Users can configure the mode to be active continuously, or to activate automatically when the video analytics in the camera detect fog and add light to the video image (and then deactivate when the fog clears or the scene changes).

High-performance imaging platforms
The camera has a professional-grade imaging platform capable of delivering 720p50/60 or 1080p25/30 in environments with ambient light extremes.
Image control and quality are integral aspects of any PTZ camera, and the MIC7000 delivers outstanding clarity and image detail. Each variant--MIC IP starlight 7000 HD (720p50/60) or MIC IP dynamic 7000 HD (1080p25/30)--has a 30x optical zoom, a 12x digital zoom, and flexible, field-selectable mounting options (upright, inverted, or canted) to achieve the perfect field of view.
Day/night capabilities and outstanding sensitivity make the camera an exceptional performer in all lighting conditions. In low light, the camera automatically switches from color to monochrome by removing the IR filter to boost sensitivity, while maintaining superior image quality. For operation in the darkest conditions, automatic control of shutter speeds increases sensitivity by more than 50 times.
Dynamic models have a full HD (1080p30) imaging platform with multiple exposures capable of delivering high dynamic range (HDR) video in scenes with simultaneous bright and dark areas. When operated in HDR mode, the camera makes multiple, simultaneous exposures of the same scene to capture details in both bright and dark parts of the scene.
Starlight models have a 720p60 imaging platform with starlight technology. The camera produces detailed video images in scenes with limited ambient lighting, without any motion blur associated with cameras that use slow shutters. The camera has been tuned to deliver high-quality HD video in both day and night operation.

Sodium vapor lamp white balance
The camera is an exceptional performer when capturing video under a sodium vapor lamp (a street lamp or tunnel lamp, for example). Uncorrected images under these conditions have a yellowish tint, which can make identification difficult. In the Sodium Vapor White Balance mode, the camera automatically compensates for the light from a sodium vapor lamp to restore objects to their original color.

Dual-mode Illumination
For night-time hours, an optional, field-installable MIC illuminator enables detection of objects more than 160 meters (525 feet) away, and unique 3D Diffuser technology ensures even illumination across the entire scene. Ensuring long-term reliability, the patented integrated Constant Light technology automatically controls and adjusts output to deliver a consistent level of illumination performance throughout the life of the product – even when operating in fluctuating temperatures. The MIC illuminator consists of both IR and White light LEDs, and operators can switch between the two light sources with a single click.

Five (5) pre-programmed user modes
Five pre-programmed but configurable user modes, optimized with the best settings for a variety of typical applications, make on-site programming easy and user-friendly. Users select from the menu the mode that best defines the environment in which the camera is installed:
- General – Default mode. Suitable for most applications.
- Low light – Optimized performance for scenes with low light level.
- Motion – Optimized to minimize motion artifacts, such as when monitoring traffic or fast-moving objects.
- Vibrant – Provides enhanced contrast, color reproduction, and sharpness.
- Illuminator – Optimized performance when using the MIC illuminator accessory.

Users have the ability to customize these modes, if necessary, for the specific requirements of the site.

Image Stabilization
As PTZ cameras continue to increase their optical zoom capabilities, image stabilization becomes critical to eliminate movement caused by unstable camera mounts. Minor movement of the camera mount can shift the field of view by a large distance when the camera is zoomed to a high value. This can render images unusable. The camera incorporates an Image Stabilization algorithm that allows the camera to detect continuous vibration. If it detects vibration, the camera dynamically corrects the shaky video in both

the vertical and horizontal axis, resulting in exceptional image clarity and a stable field of view on the monitor.

Superior privacy masking
The camera allows for a total of 24 individual privacy masks, with up to eight displayed in the same scene. These can be programmed with four corners each. Each mask changes size and shape smoothly and quickly, ensuring that the covered object cannot be seen.

Sophisticated alarm responses
The camera supports advanced alarm control that uses sophisticated rules-based logic to determine how to manage alarms. In its most basic form, a “rule” could define which input(s) should activate which output(s). In a more complex form, inputs and outputs can be combined with pre-defined or user-specified commands to perform advanced camera functions.

PTZ drive and mechanism
With a full 360º continuous rotation pan and 290º tilt control (on upright models without illuminators) and super-quick, 120°/90° per-second pan/tilt speeds for exceptional viewing capability, the camera outperforms other cameras in its class. Small increment pan speeds from just 0.2º per second to 120º per second gives the user precise control. This speed control is especially important when used with video analytic systems, particularly for tracking subjects when fully zoomed in.
The AutoScaling (proportional zoom) and AutoPivot (automatically rotates the camera) features ensure optimal control.
The camera supports 256 pre-positions and four separate Guard Tours. A standard preset tour has capability for up to 256 pre-positions, with a configurable dwell time between pre-positions. A custom preset tour has capability for up to 64 pre-positions that can be programmed in any order with a configurable dwell time between pre-positions. Two record/playback tours allow recording of the camera movements that an operator makes, including pan, tilt, and zoom, and can be played back in a continuous manner. The total duration of record/playback tours can be up to a maximum of 30 minutes. The duration varies depending on the amount of commands sent to the camera during recording.

Content-Based Imaging Technology
Content-Based Imaging Technology (C-BIT) is used to radically improve image quality in all lighting conditions and to identify areas for enhanced processing. The camera examines the scene using intelligent video analytics and provides feedback to re-tune the image processing. This provides better detail in the areas that matter and better all-round performance. With IVA, the intelligent Automatic Exposure (iAE) technology, for example, allows you to view moving objects in bright and dark areas of a scene.

Noise reduction features reduce bandwidth and storage requirements
The camera uses advanced noise reduction algorithms to analyze the scene and reduce noise artifacts. The low-noise image and the efficient H.264 compression technology combine to provide clear images while reducing bandwidth and storage compared to other H.264 cameras. This results in reduced-bandwidth streams that still retain a high image quality and smooth motion. The camera provides the most usable image possible by cleverly optimizing the detail-to-bandwidth ratio.

Intelligence
With built-in Intelligent Video Analysis (IVA), the camera reinforces the concept of Intelligence at the Edge. IVA is Bosch’s state-of-the-art intelligent video content analysis technology. With IVA, the camera reliably detects and analyzes moving objects while suppressing unwanted alarms from spurious sources in the image. IVA also allows the camera to detect multiple object behaviors including idle and removed objects, loitering, multiple line crossing, and trajectories. IVA supports BEV (Bird’s-Eye-View) People Counter and Assisted Self-Calibration. Configurable detection filters improve reliability and reduce operator work load.

Intelligent Tracking
The camera utilizes the built-in Intelligent Video Analytics (IVA) to follow an individual or an object continuously. Objects detected by IVA when the camera is in a stationary position activate the Intelligent Tracking feature, which controls the pan/tilt/zoom actions of the camera to keep the tracked object in the scene.
The new Intelligent Tracking is based on robust flow detection algorithms which can reliably track moving objects even under challenging scenes.
The tracking and detection reliability can be enhanced further with virtual masking for scenes with a lot of background motion such as trees or other objects creating constant motion in the scene.
The camera supports three modes for Intelligent Tracking:

- Auto mode: When configured in this mode, the camera actively analyzes the video to detect any moving object. If it detects movement, it begins to track the object. This mode is most useful for scenarios where no motion is expected in the scene.
- Click mode: In this mode, users can click an object moving in the live video image to enable the camera to track the movement of the selected object. This mode is most useful for scenarios where normal scene activity is expected.
- IVA-triggered mode: In this mode, the camera continuously analyzes the scene for IVA alarms or IVA rule violations. If an IVA rule is violated, it triggers the advanced tracking feature of the camera to start following the object / person that triggered the alarm. This unique combination of robust IVA and Intelligent

Tracking allows the camera to track moving objects of interest without getting distracted by other moving objects in the scene.

Virtual masking
The camera offers Virtual Masking, which gives users flexibility to mask parts of the scene which should not be considered for flow analysis to trigger Intelligent Tracking. This allows users to mask background motion in the scene such as moving trees, pulsating lights, busy roads from IVA/Tracking without blocking it from the video.

Common Product Platform (CPP4)
The camera is designed using the Bosch CPP4 which is also used in other Bosch flagship products such as DINION, AUTODOME, and FLEXIDOME.
The common product platform approach allows cameras in multiple families to have common features and menu structure. This can save integration and training efforts for installers and operators.

Advanced streaming
The camera offers advanced streaming capabilities so that you can configure the camera to take advantage of the latest network technology.
The camera is designed on the most efficient and powerful H.264 encoding platform capable of delivering high-quality HD video with very low network load. The new intelligent encoding capabilities drops the bandwidth consumption to extremely low levels if the camera detects no motion in the scene.
The camera is capable of quad streaming which allows the camera to be configured to deliver independent, configurable streams for live viewing, recording, or remote monitoring on constrained bandwidths.

ONVIF conformant
The camera conforms to the ONVIF (Open Network Video Interface Forum) specification which guarantees interoperability between network video products regardless of manufacturer. The ONVIF Profile S specification allows easy integration with the conformant devices and VMS. ONVIF conformant devices are able to exchange live video, audio, metadata, and control information, and ensure that they are automatically discovered and connected to network applications such as video management systems.

Ease of installation
The camera has been designed for quick and easy installation, a key feature from Bosch CCTV products. The camera supports mounting in upright, inverted, or canted orientation. The field-selectable canting option allows the upper section of the camera to be tilted at a 45 degree down angle. This is very useful for installations where it is necessary to view the scene directly under the camera. No matter the installation position, the camera will provide the perfect field of view.

The MIC Series has a wide range of mounting and other accessories, including a new *Hinged* DCA mount, a wall mount, a corner mount, a pole mount, and a high-capacity 24 VAC power supply. In addition, a sunshield is available when the camera will be installed in hot, sunny locations. To connect external alarm signals and control optional external washer pump devices, an inexpensive ‘alarm/washer’ interface accessory unit is available.
If a more sophisticated installation is required, connect the camera to the advanced accessory named VIDEOJET connect, which includes an integrated HPoE network connection, two standard network interfaces, integrated Bosch transcoder technology, Compact Flash-based local storage, a built-in network switch, alarm/washer control interfaces, audio I/O, and two sockets for use with SFP-based network fiber optic modules.
For installations in locations that require additional protection for the camera’s electrical interface pigtail, a special weatherproof kit is available. The kit includes IP67-rated watertight glands that seal the electrical connectors of the camera to prevent high humidity or moisture condensation from damaging the connections.
The MIC Hinged DCA (MIC-DCA-Hx) provides a convenient mounting point for a MIC7000 camera. The hinge feature allows installers to “hang” the MIC camera temporarily during installation for easier connection of cables/wiring before final bolts are installed.
Made from cast aluminum, the hinged DCA is deeper than the standard MIC-DCA in order to easily accommodate the connections from the base of the camera, and has two M25 holes (or 0.75 in. NPT holes using the supplied adapter) to accept weatherproof conduit or cable glands. An O-ring provides an IP68-rated seal between the base of the camera and the top of the DCA.

Robust design rated to an industry-leading IP68, NEMA 6P, IK10
Subjected and certified to rigorous dust and immersion tests (IP68, NEMA 6P) and impact test (IK10), MIC Series cameras are perfectly suited for installation in even the most unforgiving environments. The cameras’ aluminum housing receives a corrosion protection surface treatment, along with robust, powder coat paint. Reliable O-ring seals completely protect the internal components from the external environment, meaning that there is no need to pressurize the camera. To guarantee the seal, the factory submerges each MIC camera to ensure seal integrity before shipping.

Dual power options
Standard models without the illuminator accessory can be powered over a CAT5/6 PoE network interface cable with a Bosch 60 W Midspan (NPD-6001A, sold separately). Standard models with the illuminator accessory as well as extreme low temperature models

without the illuminator accessory can be powered with a Bosch 95 W High PoE Midspan (NPD-9501A, sold separately). For maximum reliability, the camera can be connected simultaneously to both a Bosch Midspan and a separate 24 VAC source. The camera is designed to accept a standard 24 VAC power source if a PoE network interface will not be used. Refer to the table in the Installation/configuration notes section for more information.
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Fiber Optic Kit
Bosch offers the optional VG4-SFPSCKT, a unique media converter module for use with various Bosch devices. This media converter module is designed to accept a wide-range of 10/100 Mbps SFP modules for use with Multimode or Single-mode optical fiber with LC or SC connectors.
The media converter module along with the SFP module is user-installed directly into the camera‘s power supply box to provide an integrated fiber optic solution.

Easy upgrade
Remotely upgrade the camera whenever new firmware becomes available. This ensures up-to-date products, thus protecting investment with little effort.

Unsurpassed reliability
As with all Bosch products, the camera has been subjected to the industry’s most comprehensive and demanding battery of endurance tests such as HALT (highly accelerated life testing) to make sure it will hold up through years of use. And of course, it comes with Bosch’s industry-leading 3-year warranty.

Camera Diagnostics
The camera has several built-in sensors / advanced diagnostics that display warnings on the camera’s OSD about the health of the camera. The diagnostics log records the events such as:
- Low voltage - a drop in incoming power below the level where the camera becomes non-functional
- High temperature - the internal temperature exceeds specifications
- Low temperature - the internal temperature exceeds minimum levels
- High humidity - the internal humidity exceeds 70%
- High vibration - the acceptable level of acceleration forces was exceeded
- Total hours of camera operation
- Illuminator aging history

Certain events also appear on the camera’s OSD. These diagnostic records are available for the installation or service technician to review.

Certifications and approvals

HD standards
- Complies with the SMPTE 274M-2008 Standard in:
  - Resolution: 1920x1080
  - Scan: Progressive
  - Color representation: complies with ITU-R BT.709
  - Aspect ratio: 16:9
  - Frame rate: 25 and 30 frames/s
- Complies with the 296M-2001 Standard in:
  - Resolution: 1280x720
  - Scan: Progressive
  - Color representation: complies with ITU-R BT.709
  - Aspect ratio: 16:9
  - Frame rate: 25, 30, 50 and 60 frames/s

Electromagnetic Compatibility (EMC)	Complies with FCC Part 15, ICES-003, and CE regulations, including latest versions of EN 50130-4, EN 55022:2006 inc. AL:2007, EN 61000-3-3, EN 61000-6-1, EN 61000-6-2, and EN 50121-4 (Railway applications)
Product Safety	Complies with CE, CSA, EN, and IEC Standards 60950-1 & 22
Ingress Protection Rating / Standard	IP68 (1m submersion for 24 hrs) NEMA 6P
IK Code	IK10
Salt spray	ASTM B117

Installation/configuration notes

CAMERA MODELS	Bosch 60 W Midspan	Bosch 95 W Midspan	Bosch VIDEOJET connect	Separate 24 VAC PSU
MIC-7130-Px4, MIC-7230-Px4				
With illuminator		X	X	X
Without illuminator	X	X	X	X
Extreme low temperature models				
With illuminator				X
Without illuminator		X	X	X

If using:	Camera can be powered simultaneously with:
60 W Midspan (NPD-6001A)	VIDEOJET connect (NPD-PSU-HPOE) *or* 24 VAC PSU (VG4-A-PSU0)
95 W Midspan (NPD-9501A)	VIDEOJET connect (NPD-PSU-HPOE) *or* 24 VAC PSU (VG4-A-PSU0)

Parts included

1	MIC71xx or MIC72xx Camera
1	Quick Install Guide
1	Document DVD
1	Spanner tool [to take on and off the yoke caps in order to cant the camera if desired, and to install the optional illuminator accessory (sold separately)]
1	Base gasket
1	RJ45 coupler
4	MAC address labels

Technical specifications

MIC IP dynamic 7000 HD camera [1080p models]

Imager	1/2.8-type Exmor CMOS sensor
Effective Picture Elements (Pixels)	1944 x 1224 (2.38 MP)

Lens	30x Zoom 4.3 mm to 129 mm
Field of View (FOV)	2.3° to 65°
Focus	*Automatic with manual override*
Iris	*Automatic with manual override*
Digital Zoom	*12x*

Sensitivity / Minimum Illumination (typical)	**30 IRE**	**50 IRE**
Day Mode (Color)		
Fixed shutter 1/30, High Sensitivity mode On	0.066 lux	0.209 lux
Fixed shutter 1/30, High Sensitivity mode Off	0.26 lux	0.83 lux
Fixed shutter ¼, High Sensitivity mode On	---	0.026 lux
Fixed shutter ¼, High Sensitivity mode Off	---	0.104 lux
SensUp On, High Sensitivity mode On	0.0103 lux	0.033 lux
SensUp On, High Sensitivity mode Off	0.041 lux	0.104 lux
Night Mode (Black and white)		
Fixed shutter 1/30, High Sensitivity mode On	0.033 lux	0.104 lux
Fixed shutter ¼, High Sensitivity mode On	0.0026 lux	---
SensUp On, High Sensitivity mode On	0.00129 lux	0.0041 lux

MIC IP starlight 7000 HD camera [720p60 models]

Imager	1/3-type Exmor CMOS sensor
Effective Picture Elements (Pixels)	1305 x 1049 (1.37 MP)

Lens	30x Zoom 4.3 mm to 129 mm
Field of View (FOV)	2.1° to 59°
Focus	*Automatic with manual override*
Iris	*Automatic with manual override*
Digital Zoom	*12x*

Sensitivity / Minimum Illumination (typical)	**30 IRE**	**50 IRE**
Day Mode (Color)		
Fixed shutter 1/30, High Sensitivity mode On	0.052 lux	0.166 lux
Fixed shutter 1/30, High Sensitivity mode Off	0.26 lux	0.66 lux
SensUp On (max. ¼), High Sensitivity mode On	0.0082 lux	0.033 lux
Night Mode (Black and white)		
Fixed shutter 1/30, High Sensitivity mode On	0.0103 lux	0.041 lux
Fixed shutter 1/4, High Sensitivity mode On	0.00129 lux	---
SensUp On (max. ¼), High Sensitivity mode On	0.00065 lux	0.00205 lux

Additional Camera Settings

Gain Control	Auto/Manual/Max
Aperture Correction	Horizontal and vertical
Electronic Shutter Speed (AES)	1/1 sec to 1/10000 sec (22 steps)
Wide Dynamic Range (WDR) / High Dynamic Range (HDR)	90 dB (720p/30 = 120 dB)
Signal-to-Noise Ratio (SNR)	>50 dB
Backlight Compensation (BC)	On/Off
White Balance	2000 K to 10,000 K ATW, Indoor, Outdoor, AWB Hold, Extended ATW, Manual, Outdoor Auto, Sodium Lamp Auto, Sodium Lamp
Day/Night	Monochrome, Color, Auto
Anti-fog image feature	Allows the camera to “see” and register a usable image through the heaviest fog

Mechanical

Drive Unit	Brushless, integral pan/tilt motor drive
Pan Range	360° continuous rotation
Tilt Angle	Without illuminators (upright orientation): 290° Without illuminators (inverted orientation): 250° With illuminators: 186.6°
Tilt Range	Upright unit: -58° - +90° Canted unit: -90° - +90°
Variable Pan Speed	0.2°/second - 120°/second
Variable Tilt Speed	0.2°/second - 90°/second
Pre-position Speed	120°/second
Preset Accuracy	0.17° (typical)
Proportional Pan / Tilt to Zoom	Yes
Zoom Movement Speed	<5 seconds (optical Wide to optical TELE)
	<7.5 seconds (optical Wide to digital TELE)
Audible Noise	<65dB

Electrical

Input Voltage	21-30 VAC, 50/60 Hz and/or Ethernet High PoE cable connection (56 VDC)
Power Consumption (standard model)	Without illuminator: 40 W maximum With illuminator: 70 W maximum
Power Consumption (Extreme low temperature models)	Without illuminator: 55 W maximum With illuminator: 85 W maximum

Communications / Software Control

Camera Setup/Control	Via Internet Explorer web browser version 7.0 or later, Bosch Configuration Manager, Bosch Video Management System (BVMS), Bosch Video Client (BVC), or support for third party software
Software Update	Network firmware upload

Network

Communications Protocols	Standard Bosch IP protocol, including ONVIF and SNMP v1
Standards / Video compression	H.264 (ISO/IEC 14496-10), M-JPEG, JPEG
Streaming	Four (4) individually configurable streams: Two (2) independently configurable H.264 recording streams plus two (2) additional non-recording streams. Configurable frame rate and resolution.
H.264 recording Stream 1	Options are: - H.264 MP 1080p25/30 fixed; - H.264 MP 720p25/30 fixed; - H.264 MP SD
H.264 recording Stream 2	Options vary depending on Stream 1 selection. Options with “H.264 MP 1080p25/30 fixed” selected for Stream 1: - Copy Stream 1; - H.264 MP SD; - H.264 MP 720p8/10 fixed; - H.264 MP 1080p4/5 fixed; - H.264 MP upright (cropped); - H.264 MP D1 4:3 (cropped); Options with “H.264 MP 720p25/30 fixed” selected for Stream 1: - H.264 MP SD; - H.264 MP 720p35/30 fixed; - H.264 MP upright (cropped); - H.264 MP D1 4:3 (cropped); - H.264 MP 1280x960 (cropped) Option with “H.264 MP SD” selected for Stream 1: H.264 MP SD
Two (2) non-recording (I-frame only) streams/ profiles	Options are: - HD Image Optimized; - HD Balanced; - HD Bit Rate Optimized; - SD Image Optimized; - SD Balanced; - SD Bit Rate Optimized; - DSL Optimized; - 3G Optimized

Resolution (H x V)	
1080p HD	1920 x 1080
720p HD	1280 x 720
432p SD	768 x 432
288p SD	512 x 288
144p SD	256 x 144

Protocols	IPv4, IPv6, UDP, TCP, HTTP, HTTPS, RTP/ RTCP, IGMP V2/V3, ICMP, ICMPv6, RTSP, FTP, Telnet, ARP, DHCP, SNTP, SNMP (v1, MIB-II), 802.1x, DNS, DNSv6, DDNS (DynDNS.org, selftHOST.de, no-ip.com), SMTP, iSCSI, UPnP (SSDP), DiffServ (QoS), LLDP, SOAP, Dropbox, CHAP, digest authentication
Ethernet	10-Base T/100 Base-TX, auto-sensing, half/ full duplex, RJ45
Encryption	TLS 1.0, SSL, DES, 3DES, AES
GOP Structure	IP, IBP, IBBP
Data Rate	9.6 kbps to 6 Mbps
Overall IP Delay	240 ms

Miscellaneous

Sectors / Titling	16 independent sectors with 20 characters per title
Privacy Masking	24 individually configurable privacy masks
Virtual Masking	24 individually configurable masks to hide parts of the scene (background motion such as moving trees, pulsating lights, busy roads, etc.) which should not be considered for flow analysis to trigger Intelligent Tracking.
Pre-positions	256, each with 20 characters per title
Camera Setup / Control	100 Base-Tx Ethernet
Guard Tours	Two (2) types of tours: • Recorded tours - two (2), maximum total duration 30 minutes (depending on amount of commands sent during recording) • Preset tour - one (1), consisting of up to 256 scenes consecutively, and (1) customized up to 64 scenes
Supported Languages	English, Czech*, Dutch, French, German, Italian, Polish, Portuguese, Russian*, Spanish * Available with separate language upload

User Connections

Power, Network	Without illuminator: RJ-45 100 Base-TX Ethernet PoH (60 W midspan; NPD-6001A), or HPoE 95 W midspan (NPD-9501A) With illuminator: HPoE 95 W midspan (NPD-9501A)*
Power, Camera	24 VAC (power supply)
Video and Control	RJ-45 100 Base-TX Ethernet RS-485 Simplex 9600 baud (dedicated for MIC-ALM-WAS-24)
Alarm/Washer	3-wire RS-485

* Must purchase either the NPD-9501A or the NPD-PSU-HPOE in order to use the PoH solution.

Environmental

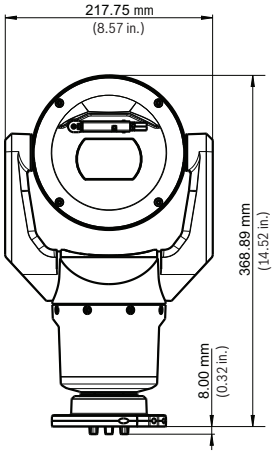
Ingress Protection Rating/ Standard	IP68 NEMA 6P, when using installed MIC-DCA or MIC-WMB IP67 (dust and moisture) rating on pigtail connections
External Mechanical Impact (IK Code or Impact rating)	IK10
Operating Temperature (standard models)	-40 °C to +60 °C (-40 °F to +140 °F)
Operating Temperature (Extreme low temperature models)	-60 °C to +50 °C (-76 °F to +122 °F)
Cold Start-up Temperature	-40 °C (-40 °F) (Requires 60-minute warm-up prior to PTZ operations.)
Storage Temperature	-60 °C to +70 °C (-76 °F to +158 °F)
Humidity	0-100%
Wind Load	209 km/h (130 mph) (sustained) (Gusts up to 290 km/h (180 mph)) Effective Projected Area (EPA): 0.044m² (0.47 ft²)
Vibration	IEC 60068-2-6, Test Fc: Vibration (sinusoidal), 20m/s² (2.0g) Sinusoidal vibration test IAW MIL-STD-167-1A
Shock	IEC 60068-2-7, Test Ea: Shock, 20g Medium weight Hammer Shock IAW MIL-S-901D

Construction

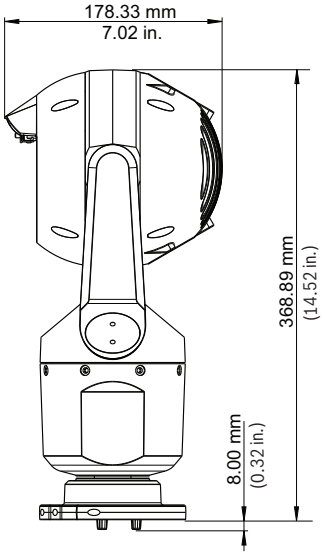
Dimensions (W x H x D) (Standard models)	Without illuminator or sunshield: *Upright, Inverted:* 217.75 mm x 368.89 mm x 178.33 mm (8.57 in. x 14.52 in. x 7.02 in.) *Canted:* 217.75 mm x 330.96 mm x 239.68 mm (8.57 in. x 13.03 in. x 9.44 in.) Without illuminator accessory, but with sunshield: *Upright, Inverted:* 217.75 mm x 372.20 mm x 178.33 mm (8.57 in. x 14.65 in. x 7.02 in.) *Canted:* 217.75 mm x 334.27 mm x 239.68 mm (8.57 in. x 13.16 in. x 9.44 in.) With illuminator accessory: *Upright, Inverted:* 217.75 mm x 439.91 mm x 178.33 mm (8.57 in. x 17.32 in. x 7.02 in.) *Canted:* 217.75 mm x 401.98 mm x 239.68 mm (8.57 in. x 15.83 in. x 9.44 in.)
Dimensions (W x H x D) (Extreme low temperature models)	*Upright, Inverted:* 217.75 mm x 372.20 mm x 178.33 mm (8.57 in. x 14.65 in. x 7.02 in.) *Canted:* 217.75 mm x 334.27 mm x 239.68 mm (8.57 in. x 13.16 in. x 9.44 in.)
Weight	6.7 kg (14.7 lb)
Viewing Window	Tempered flat glass
Construction Material	Cast solid aluminum
Standard Colors	Black (RAL 9005), White (RAL 9010); Grey (RAL 7001) (Specific regions only.)
Standard Finish	Corrosion protection surface treatment with powder coat paint, sand finish

Window Wiper	Standard, long-life silicone wiper
Sunshield	Optional; sold separately
Canting	On-site canting functionality

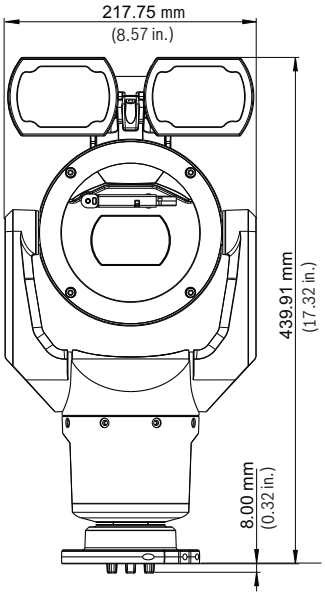
Dimensional Drawings



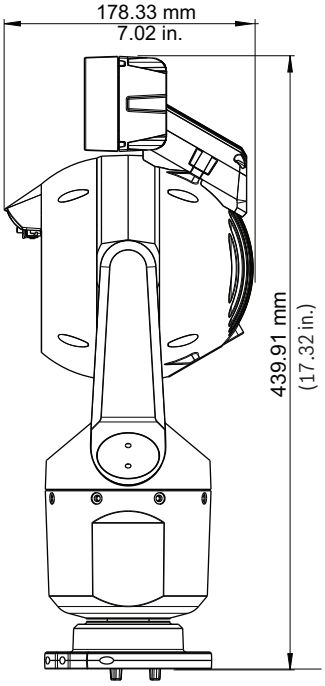
Front view, without illuminator, 90° (upright)



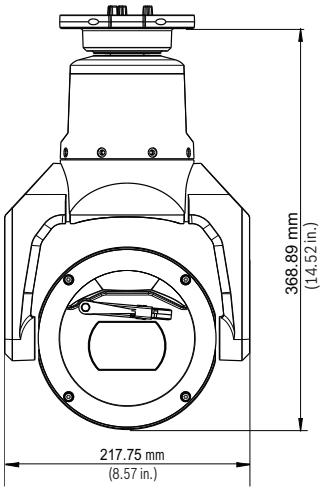
Side view, without illuminator, 90° (upright)



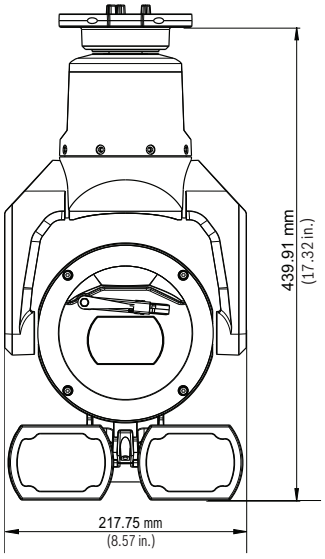
Front view, with illuminator, 90° (upright)



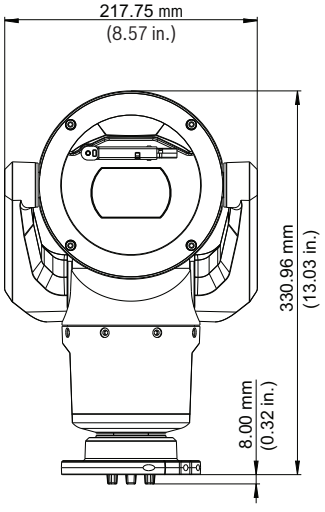
Side view, with illuminator, 90° (upright)



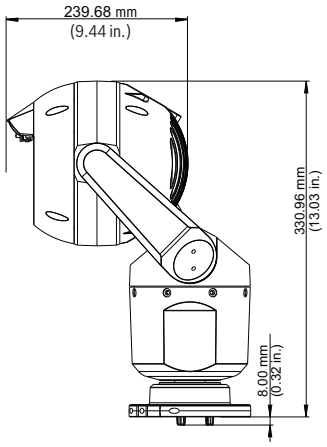
Front view, without illuminator, 90° (inverted)



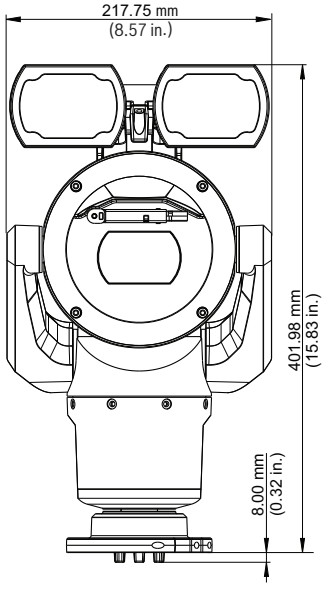
Front view, with illuminator, 90° (inverted)



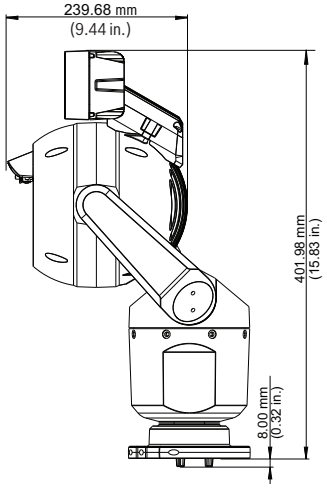
Front view, without illuminator, 45° (canted)



Side view, without illuminator, 45° (canted)



Front view, with illuminator, 45° (canted)



Side view, with illuminator, 45° (canted)

Ordering information

MIC-7130-PB4 Ruggedized HD Camera
Ruggedized 720p50/60 HD PTZ day/night camera with 30x zoom, excellent low-light imaging, IVA. Easy install with hinged DCA mount (sold separately). Optional illuminator (sold separately).
Black (RAL 9005)
Order number **MIC-7130-PB4**

MIC-7130-PW4 Ruggedized HD Camera
Ruggedized 720p50/60 HD PTZ day/night camera with 30x zoom, excellent low-light imaging, IVA. Easy install with hinged DCA mount (sold separately). Optional illuminator (sold separately).
White (RAL 9010)
Order number **MIC-7130-PWR**

MIC-7130-PG4 Ruggedized HD Camera
Ruggedized 720p50/60 HD PTZ day/night camera with 30x zoom, excellent low-light imaging, IVA. Easy install with hinged DCA mount (sold separately). Optional illuminator (sold separately).
Grey (RAL 9006) (Certain regions only)
Order number **MIC-7130-PG4**

MIC-7230-PB4 Ruggedized HD Camera
Ruggedized 1080p25/30 HD PTZ day/night camera with 30x zoom, high dynamic range, IVA. Easy install with hinged DCA mount (sold separately). Optional illuminator (sold separately).
Black (RAL 9005)
Order number **MIC-7230-PB4**

MIC-7230-PW4 Ruggedized HD Camera
Ruggedized 1080p25/30 HD PTZ day/night camera with 30x zoom, high dynamic range, IVA. Easy install with hinged DCA mount (sold separately). Optional illuminator (sold separately).
White (RAL 9010)
Order number **MIC-7230-PW4**

MIC-7230-PG4 Ruggedized HD Camera
Ruggedized 1080p25/30 HD PTZ day/night camera with 30x zoom, high dynamic range, IVA. Easy install with hinged DCA mount (sold separately). Optional illuminator (sold separately).
Grey (RAL 9006) (Certain regions only)
Order number **MIC-7230-PG4**

MIC-7130-PB4PB Ruggedized HD Camera
Ruggedized 720p50/60 HD PTZ day/night camera designed to operate at extreme low temperature (-60 °C/-76 °F). 30x zoom, excellent low-light imaging, IVA. Easy install with hinged DCA mount (sold separately). Optional illuminator (sold separately).
Black (RAL 9005)
Order number **MIC-7130-PB4PB**

MIC-7130-PW4PB Ruggedized HD Camera
Ruggedized 720p50/60 HD PTZ day/night camera designed to operate at extreme low temperature (-60 °C/-76 °F). 30x zoom, excellent low-light imaging, IVA. Easy install with hinged DCA mount (sold separately). Optional illuminator (sold separately).
White (RAL 9010)
Order number **MIC-7130-PW4PB**

MIC-7230-PB4PB Ruggedized HD Camera
Ruggedized 1080p25/30 HD PTZ day/night camera designed to operate at extreme low temperature (-60 °C/-76 °F). 30x zoom, high dynamic range, IVA. Easy install with hinged DCA mount (sold separately). Optional illuminator (sold separately).
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Order number **MIC-7230-PB4PB**

MIC-7230-PW4PB Ruggedized HD Camera
Ruggedized 1080p25/30 HD PTZ day/night camera designed to operate at extreme low temperature (-60 °C/-76 °F). 30x zoom, high dynamic range, IVA. Easy install with hinged DCA mount (sold separately). Optional illuminator (sold separately).
White (RAL 9010)
Order number **MIC-7230-PW4PB**

MIC-DCA-HB MIC Hinged DCA, Black
DCA for mounting a MIC7000 camera. Hinge allows camera to hang temporarily during installation for easier connection of cables/wiring. Two M25 holes for conduit/cable glands. Aluminum. Jet Black (RAL 9005), sand finish.
Order number **MIC-DCA-HB**

MIC-DCA-HW MIC Hinged DCA, White
DCA for mounting a MIC7000 camera. Hinge allows camera to hang temporarily during installation for easier connection of cables/wiring. Two M25 holes for conduit/cable glands. Aluminum. Pure White (RAL 9010), sand finish.
Order number **MIC-DCA-HW**

MIC-DCA-HG MIC Hinged DCA, Grey
DCA for mounting a MIC7000 camera. Hinge allows camera to hang temporarily during installation for easier connection of cables/wiring. Two M25 holes for conduit/cable glands. Aluminum. Silver Grey (RAL 7001; specific regions only), sand finish.
Order number **MIC-DCA-HG**

MIC-DCA-HS MIC Hinged DCA, Stainless Steel
DCA for mounting a MIC7000 camera. Hinge allows camera to hang temporarily during installation for easier connection of cables/wiring. Two M25 holes for conduit/cable glands. Aluminum. Stainless steel.
Order number **MIC-DCA-HS**

Accessories

MIC-ILB-100 Illuminator, IR/White Light Combo, Black
Illuminator for MIC7000 Series. Combination of IR + white light LEDs (850 nm IR). Object classification to 100 m (492 ft).
Jet Black (RAL 9005). Sand finish.
Order number **MIC-ILB-100**

MIC-ILW-100 Illuminator, IR/White Light Combo, White
Illuminator for MIC7000 Series. Combination of IR + white light LEDs (850 nm IR). Object classification to 100 m (492 ft).
Pure White (RAL 9010). Sand finish.
Order number **MIC-ILW-100**

MIC-ILG-100 Illuminator, IR/White Light Combo, Grey
Illuminator for MIC7000 Series. Combination of IR + white light LEDs (850 nm IR). Object classification to 100 m (492 ft).
Silver Grey (RAL 7001). (Specific regions only.) Sand finish.
Order number **MIC-ILG-100**

MIC-ILS-100 Illuminator, IR/White Light Combo, Stainless Steel
Illuminator for MIC7000 Series. Combination of IR + white light LEDs (850 nm IR). Object classification to 100 m (492 ft).
Stainless steel.
Order number **MIC-ILS-100**

MIC-ILB-200 Illuminator, IR/White Light Combo, Variable FOV, Black
Illuminator for MIC7000 Series. Combination of IR + white light LEDs (850 nm IR). Object classification to 200 m (656 ft).
Beam width matches camera FOV.
Jet Black (RAL 9005). Sand finish.
Order number **MIC-ILB-200**

MIC-ILW-200 Illuminator, IR/White Light Combo, Variable FOV, White
Illuminator for MIC7000 Series. Combination of IR + white light LEDs (850 nm IR). Object classification to 200 m (656 ft).
Beam width matches camera FOV.
Pure White (RAL 9010). Sand finish.
Order number **MIC-ILW-200**

MIC-ILG-200 Illuminator, IR/White Light Combo, Variable FOV, Grey
Illuminator for MIC7000 Series. Combination of IR + white light LEDs (850 nm IR). Object classification to 200 m (656 ft).
Beam width matches camera FOV.
Silver Grey (RAL 7001). (Specific regions only.) Sand finish.
Order number **MIC-ILG-200**

MIC-ILS-200 Illuminator, IR/White Light Combo, Variable FOV, Stainless Steel
Illuminator for MIC7000 Series. Combination of IR + white light LEDs (850 nm IR). Object classification to 200 m (656 ft).
Beam width matches camera FOV.
Stainless steel.
Order number **MIC-ILS-200**

VG4-A-PSU0 24 VAC Power Supply Unit
Power supply, 24 VAC input, for a PTZ camera in the AUTODOME Series. White, aluminum enclosure with cover, rated IP66 and IK 08. 100 W output. Optional trim skirt (sold separately).
Order number **VG4-A-PSU0**

PoH Midspan, 95 W
High PoE, 95 W, Single Port Midspan with AC in
Order number **NPD-9501A**

NPD-6001A High PoE Midspan 60W, single port, AC in
High Power, 60 W Single Port PoE Midspan with AC in
Order number **NPD-6001A**

VIDEOJET connect Power Supply Unit
95 W, PoE IP power supply unit, 120–230 VAC, 50/60 Hz
Order number **NPD-PSU-HPOE**

MIC7000 Alarm/Washer Interface Unit
light-gray (RAL 7035)
Order number **MIC-ALM-WAS-24**

VG4-SFPSCKT Fiber Optic Ethernet Media Converter Kit
Ethernet media converter video transmitter/data receiver fiber optic kit
Order number **VG4-SFPSCKT**

SFP-2 Small Form-factor Pluggable Optical Interface
SFP Fiber Optic Module, Multi-mode, 1310 nm, 2 km (1.2 miles), 2 LC connectors
Order number **SFP-2**

SFP-3 Small Form-factor Pluggable Optical Interface
SFP Fiber Optic Module, Single-mode, 1310 nm, 20 km (12.4 miles), 2 LC connectors
Order number **SFP-3**

SFP-25 Small Form-factor Pluggable Optical Interface
SFP Fiber Optic Module, Multi-mode, 1310/1550 nm, 2 km (1.2 miles), 1 SC connector
Order number **SFP-25**

SFP-26 Small Form-factor Pluggable Optical Interface
SFP Fiber Optic Module, Multi-mode, 1550/1310 nm, 2 km (1.2 miles), 1 SC connector
Order number **SFP-26**

MIC-WMB-BD Wall Mount Bracket, Black
Wall mount bracket, black sand finish (RAL9005)
Order number **MIC-WMB-BD**

MIC-WMB-WD Wall Mount Bracket, White
Wall mount bracket, white sand finish (RAL9010)
Order number **MIC-WMB-WD**

MIC-WMB-GD Wall Mount Bracket, Grey
Wall mount bracket, grey sand finish (RAL9006)
Order number **MIC-WMB-GD**

MIC-WMB-S Wall Mount Bracket, Stainless Steel
Wall mount bracket, grade 316 stainless steel (Requires MIC-SPR or MIC-PMB for secure mounting because of weight.)
Order number **MIC-WMB-S**

MIC-PMB Pole Mount Bracket
Pole mount bracket (includes 2 x 455 mm stainless steel banding straps for pole diameters 75 to 145 mm)
Order number **MIC-PMB**

MIC-CMB-BD Corner Mount Bracket, Black
Corner mount bracket, black sand finish (RAL9005)
Order number **MIC-CMB-BD**

MIC-CMB-WD Corner Mount Bracket, White
Corner mount bracket, white sand finish (RAL9010)
Order number **MIC-CMB-WD**

MIC-CMB-GD Corner Mount Bracket, Grey
Corner mount bracket, grey sand finish (RAL 9006)
Order number **MIC-CMB-GD**

MIC-SPR-BD Spreader Plate, Black
Aluminum spreader plate suitable for brickwork surface mounting, black sand finish (RAL9005)
Order number **MIC-SPR-BD**

MIC-CMB-S Corner Mount Bracket, Stainless Steel
Corner mount bracket, grade 316 stainless steel
Order number **MIC-CMB-S**

MIC-SPR-WD Spreader Plate, White
Aluminum spreader plate suitable for brickwork surface mounting, white sand finish (RAL9010)
Order number **MIC-SPR-WD**

MIC-SPR-GD Spreader Plate, Grey
Aluminum spreader plate suitable for brickwork surface mounting, grey sand finish (RAL 9006)
Order number **MIC-SPR-GD**

MIC-SPR-S Spreader Plate, Stainless Steel
316L stainless steel spreader plate suitable for brickwork surface mounting, plain finish
Order number **MIC-SPR-S**

MIC-SCA-BD Shallow Conduit Adapter, Black
Shallow conduit adapter for a MIC-WMB, a MIC-PMB, or a MIC-SPR, black sand finish (RAL9005)
Order number **MIC-SCA-BD**

MIC-SCA-WD Shallow Conduit Adapter, White
Shallow conduit adapter for a MIC-WMB, a MIC-PMB, or a MIC-SPR mount, white sand finish (RAL9010)
Order number **MIC-SCA-WD**

MIC-SCA-GD Shallow Conduit Adapter, Grey
Shallow conduit adapter for a MIC-WMB, a MIC-PMB, or a MIC-SPR, grey sand finish (RAL 9006)
Order number **MIC-SCA-GD**

MIC-67SUNSHLD
Three-part sunshield for MIC 7000 cameras, white
Order number **MIC-67SUNSHLD**

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